UNIVERSITY OF LEEDS

Interdisciplinary Learning: Working Across Disciplines

Why do you need to able to work across disciplines?

Why is interdisciplinary study and work needed?

Many problems in the world are too complex and interlocked to be solved by a single subject area, known as a discipline. For example, the problem of world hunger needs the combined expertise of economics, politics, sciences, social sciences, and more. These disciplines can't solve it working alone – they need to be able to talk to each other.

In this exercise, you will explore how different disciplines can work together to solve real-world problems. Scenarios like the following are generally true, but within any discipline, there will be complex exceptions. The generalisations made on this course about any discipline should not be treated as a stereotype or caricature of that discipline. It's always most important to talk to peers in other disciplines to get an understanding from their point of view so that you can meet in the middle.

Read the following three case studies. These examples highlight the role of interdisciplinary learning in three different contexts.

Studying biology and politics

A university student is studying in the biology and politics disciplines, and needs to establish how the subjects are different and how they can be studied together.

Biology is a STEM (science, technology, engineering, mathematics) discipline, so the research is always grounded in the scientific method of testing hypotheses in the laboratory. This means reducing the question to something that can be rigorously controlled. The scientific method uses tried and tested methods as a starting point to carry out an experiment. This leads to new knowledge, including any failed experiments that tell other researchers what has not worked.

In contrast, politics is a humanities discipline – a particularly broad one – that draws on history, sociology, anthropology, law, and economics, etc. The tendency in the humanities is to address the question from multiple different angles, to find the convergence points that lead to a new 'truth'.

A common real-world example here are climate scientists, who work in public policy or as consultants to government departments. These researchers need to learn how to talk to politicians and lawmakers, because the language and methods used in biology will not be effective in that arena. You will look at this in more detail later in the course.

Researching economics and healthcare

A university researcher in economics is collaborating with other researchers in different healthcare disciplines.

They need to ensure that they have a shared understanding of the aims and tasks of the research.

In this case, there is a typical conflict between practice and theory. Economics tends to look at people as an abstract part of an economic system (whether that's a household or a whole country). While healthcare does this too, it also needs to be able to apply its policies to specific individuals, so the healthcare approach is often more practical and user-centred.

Working with engineering

A professional engineer is working on a shared project with an artist. They need to understand their different approaches to that project, in order to make it successful.

If the engineer's job is simply to realise the artists' plan, there are not so many issues (since it will come down to what is possible).

However, if the artist and engineer are collaborating, then there may be issues. The engineer's training is to find the 'best' solution to a problem, but this could conflict with the artistic interest in the 'most artistically interesting' solution.

The 'best' solution will be a compromise between economic and material restraints, user requirements and other practicalities. In contrast, the artist may want to ignore many of these to explore new ideas.

These case studies focus on the potential tensions between different disciplines, but it's not all negative. Working with other disciplines broadens your understanding of the world and your own discipline.

What will interdisciplinary mean to you?

You may already be working or studying across different disciplines, or with people from other disciplines.

Think about what working across different disciplines means to you, and write down some key terms. This could be subjects or specialisms you will work or study in, projects you are collaborating on, problems you think need an interdisciplinary approach to solve, or simply key words or terms that you associate with interdisciplinary studies.